

CLAIMS

What is claimed is:

1. A process for coating a filament comprising the steps of:
 - providing a photopolymerizable liquid composition;
 - 5 immersing a portion of a filament in a substantially horizontal orientation to a depth in said liquid composition; and
 - exposing said liquid composition adjacent said portion to actinic radiation from an exposure source to cure said liquid composition to provide an immersion coated portion having a cured layer of said liquid composition applied to
 - 10 said portion.
2. The process of claim 1, wherein the filament is an optical fiber.
3. The process of claim 2, wherein said portion is a bare portion of the optical fiber.
4. The process of claim 1, further comprising adjusting said depth.
- 15 5. The process of claim 4, wherein said depth is from about 0.1 mm to about 0.2 mm.
6. The process of claim 1, wherein said exposing said liquid composition includes focusing radiation from said exposure source in a plane adjacent to the surface of said liquid composition.
- 20 7. The process of claim 6, wherein said plane is a substantially horizontal plane.
8. The process of claim 6, wherein said focusing radiation uses a lens located between said exposure source and said plane.

9. The process of claim 1, wherein said immersing a portion uses a filament holding fixture to locate said bare portion at said depth in said liquid composition.

10. The process of claim 1, wherein said immersion coated portion has a substantially circular cross section.

5 11. The process of claim 10, wherein said substantially circular cross section has an aspect ratio less than about 1.4.

12. An apparatus for coating a filament, said apparatus comprising:

a reservoir of a photopolymerizable liquid composition having a surface;

10 an exposure source emitting actinic radiation to cure said liquid composition;

a lens located between said surface and said exposure source to focus radiation from said exposure source in a plane proximate to said surface of said liquid composition; and

15 a filament holding fixture for immersing at least a portion of the filament at a depth in said liquid composition, said apparatus providing a cured coating by exposing said liquid composition to said exposure source, said cured coating covering said at least a portion immersed by said filament holding fixture in said liquid composition.

20 13. The apparatus of claim 12, wherein the filament is an optical fiber.

14. The apparatus of claim 13, wherein said portion is a bare portion of the optical fiber.

15. The apparatus of claim 13, wherein said optical fiber has a substantially horizontal orientation when immersed by said filament holding fixture in said liquid composition.

16. The apparatus of claim 12, wherein said plane is a substantially horizontal plane.

17. The process of claim 12, wherein said depth is from about 0.1 mm to about 0.2 mm.

5 18. The apparatus of claim 12, wherein said filament holding fixture comprises a filament holding plate attached to a clamp by a pivot, said clamp slidingly engaging a support rod for adjusting the height of the filament holding plate and the clamp relative to said surface of said liquid composition.

10 19. The apparatus of claim 18, wherein said filament holding plate comprises at least one masking flange to provide demarcation of a section of filament to be coated.